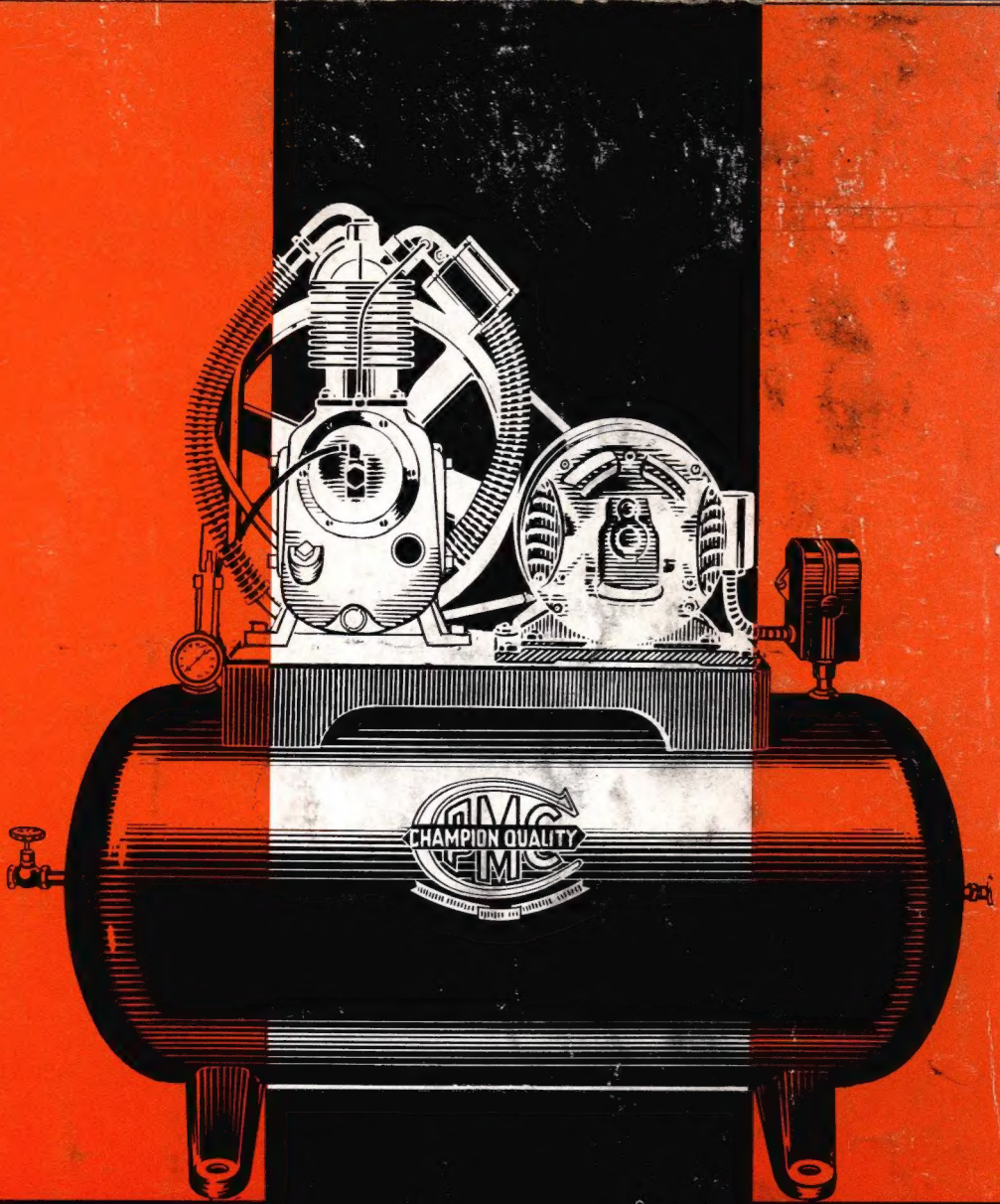


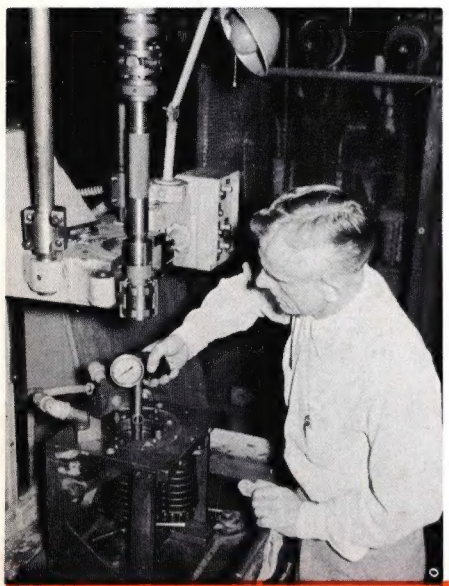

# CHAMPION

**AIR COMPRESSORS • CAR WASHERS • HOSE REELS**
**FOR AUTOMOTIVE • INDUSTRIAL • AGRICULTURAL USE**

**CHAMPION PNEUMATIC MACHINERY COMPANY**
825 NORTH PLEASANT ST., PRINCETON, ILLINOIS

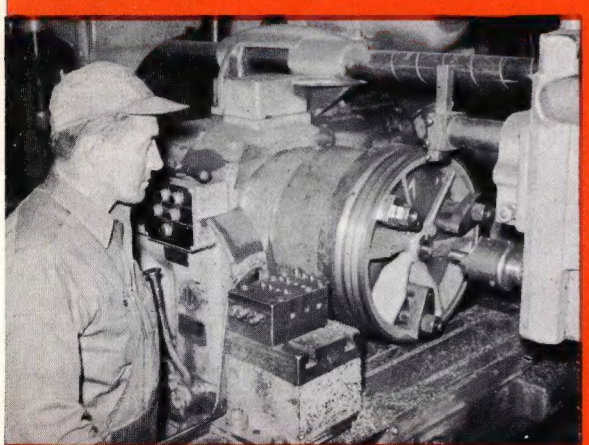
*the very best in*
**EXPERIENCE**
**DESIGN**
**SERVICE**

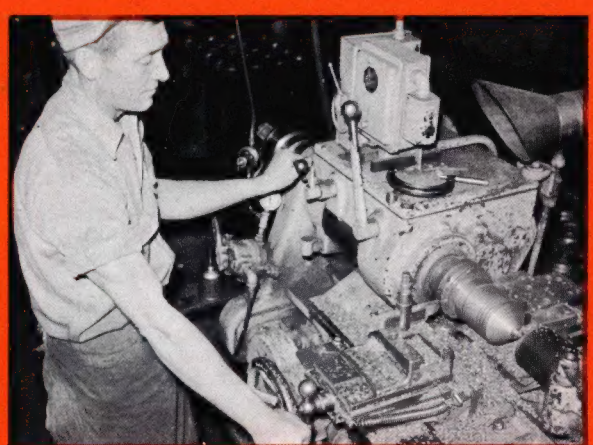
# CHAMPION

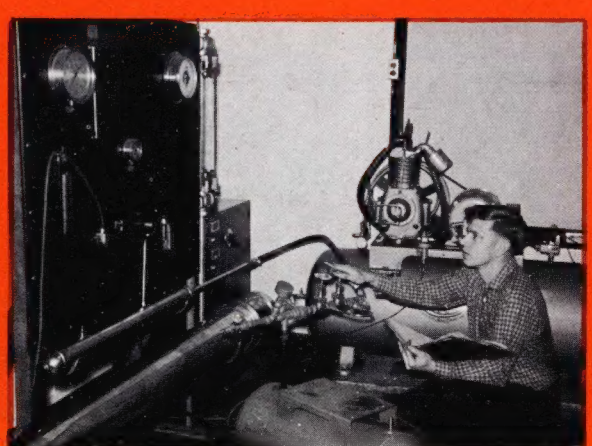


Champion engineering and manufacturing facilities are second to none. For more than 37 years, every Champion Air Compressor has been designed and built to one overall specification—Efficient, Economical and Long-Life SERVICE!

Constant research, broad experience, skilled labor and the most modern production facilities, coupled with the use of the finest material and backed by an experienced service organization, add up to the very best—the CHAMPION Air Compressor!

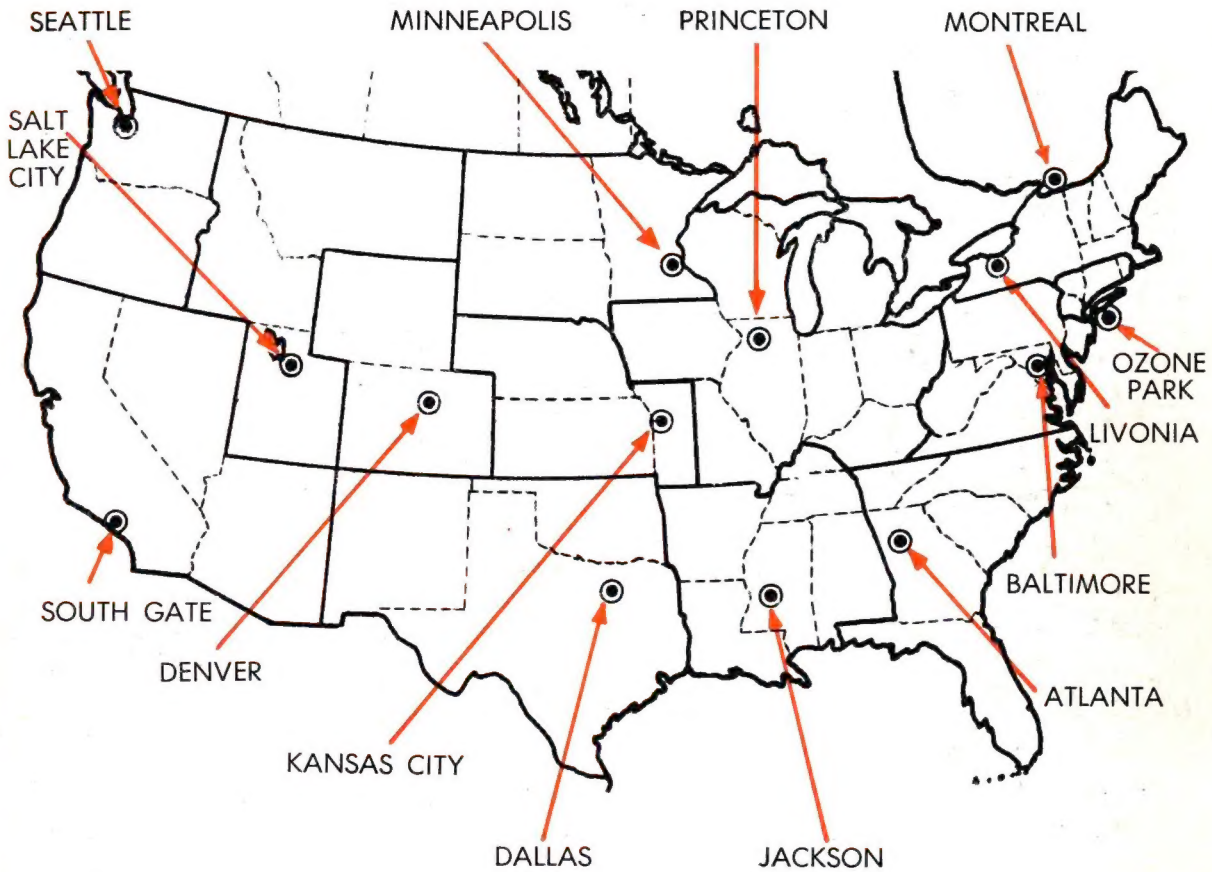






# CHAMPION

**THE SERVICE BEHIND THE PRODUCT**

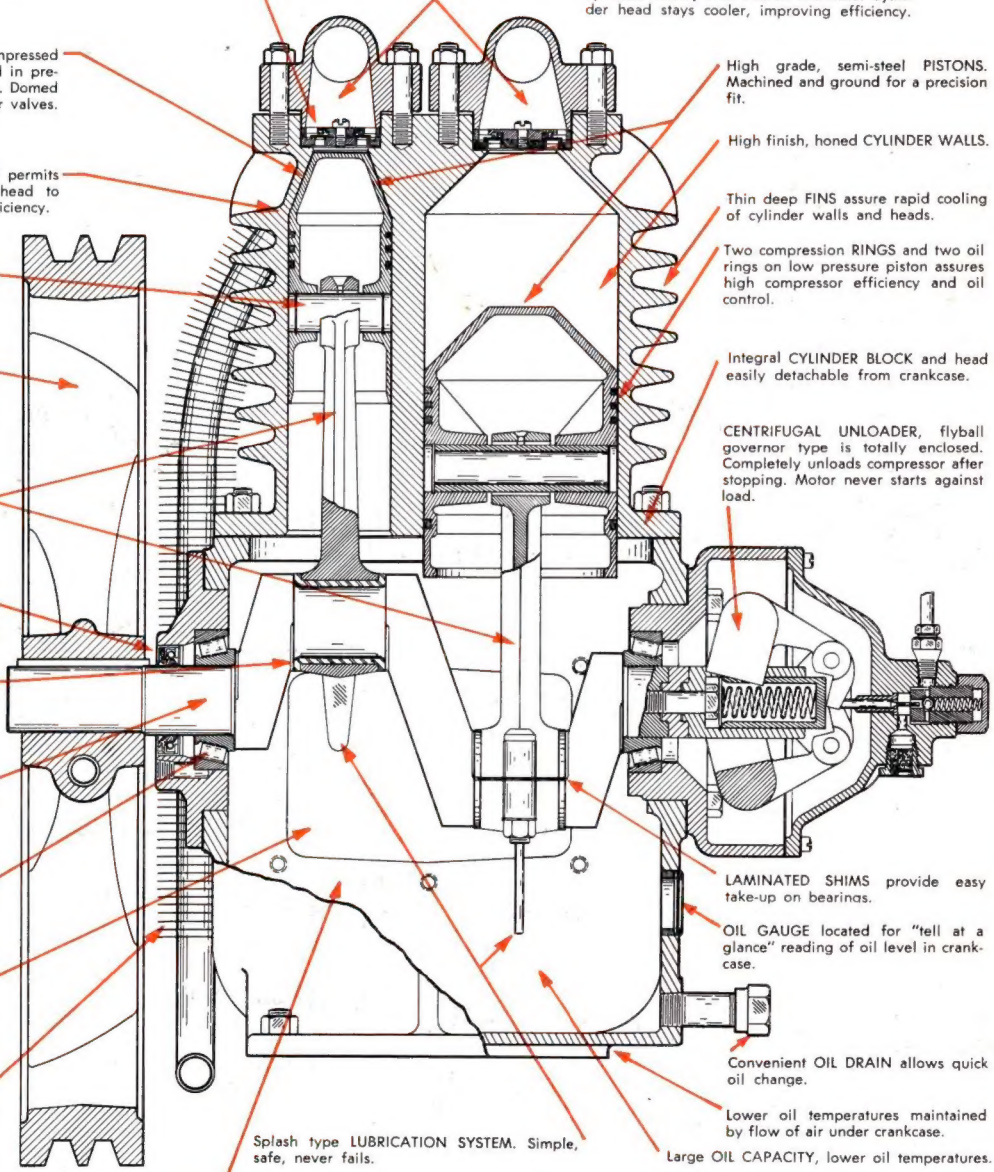



This nation-wide network of AUTHORIZED CHAMPION PARTS DEPOTS located in strategic areas enables the users of CHAMPION AIR COMPRESSORS to readily obtain repair parts at any time.

Coupled with the CHAMPION PUMP EXCHANGE PLAN, this system provides the finest factory service available in the compressor industry.

# OUTSTANDING FEATURES MAKE A CHAMPION

CHAMPION


One unit plate VALVES operate in large unrestricted air flow area. Quiet, quick acting, heat and wear resisting.
Large area MANIFOLDS allow unrestricted air flow. Easily removed for valve inspection. Air heated by compression is exhausted from cylinder directly into exhaust manifold. Cylinder head stays cooler, improving efficiency.
DOMED PISTONS keep compressed air and cylinders cooler, aid in preventing oil film break down. Domed design enables use of larger valves. Increases overall efficiency.
High grade, semi-steel PISTONS. Machined and ground for a precision fit.
High finish, honed CYLINDER WALLS.
ABSENCE OF HEAD GASKET permits conduction of heat from head to cooling fins for greater efficiency.
Thin deep FINS assure rapid cooling of cylinder walls and heads.
Two compression RINGS and two oil rings on low pressure piston assures high compressor efficiency and oil control.
Full floating PISTON PINS. Case-hardened and ground with hydrolapped finish.
Integral CYLINDER BLOCK and head easily detachable from crankcase.
Perfectly balanced fan type FLYWHEEL delivers powerful stream of cooling air to cylinders, inter and after-cooler.
CENTRIFUGAL UNLOADER, flyball governor type is totally enclosed. Completely unloads compressor after stopping. Motor never starts against load.
Drop forged CONNECTING RODS with bronze piston pin bushings.
OIL SEAL keeps dirt out, oil in.
Babbitt CONNECTING ROD BEARINGS assure longer service life.
Ground drop forged CRANKSHAFT of highest quality steel.
LAMINATED SHIMS provide easy take-up on bearings.
OIL GAUGE located for "tell at a glance" reading of oil level in crankcase.
Tapered roller, MAIN BEARINGS reduce friction and last longer.
Large HAND HOLE OPENINGS permit simple inspection and servicing.
Convenient OIL DRAIN allows quick oil change.
Finned copper INTERCOOLER directly in fly-wheel air stream.
Lower oil temperatures maintained by flow of air under crankcase.
Splash type LUBRICATION SYSTEM. Simple, safe, never fails.
Large OIL CAPACITY, lower oil temperatures.
Totally ENCLOSED CRANKCASE prevents dirt and grit from entering and contaminating oil.

# CHAMPION

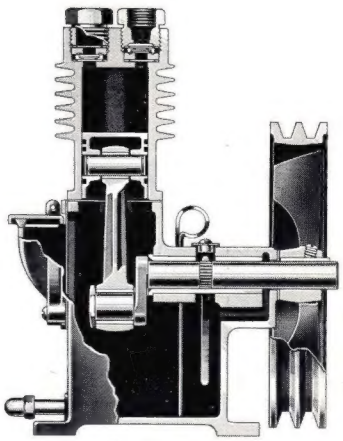
**1, 2 AND 4 CYLINDERS  150-200 LBS. MAXIMUM PRESSURE**

# SINGLE AND TWO STAGE AIR COMPRESSORS

Less Storage Tanks or Motors

## MODEL U-1 SINGLE STAGE COMPRESSORS

have detachable cylinders. Cylinder and Cylinder head cast integral—no head gasket to blow or leak. Piston fitted with three compression rings and one oil ring.



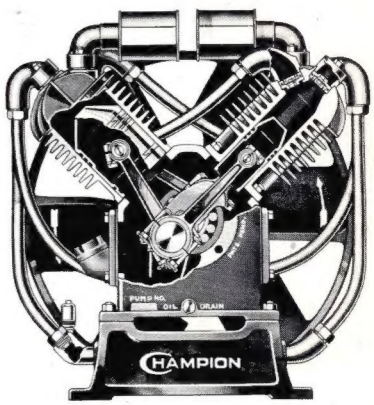
U-1

## TWO CYLINDER TWO STAGE COMPRESSORS

(see diagram page 2). Models RE-4, REN-7, REN-10 & REN-14 are two cylinder vertical compressors with integral cast head and cylinder block.

## FOUR CYLINDER TWO STAGE COMPRESSORS

Models RE-20 and RE-36 are 4-cylinder "V" type compressors utilizing two 2-cylinder blocks. Air cooled. Includes all the outstanding Champion Quality features listed on page 2 or 4.




RE-20

## SPECIFICATIONS

**SINGLE STAGE**

| Model | No. Cyl. | Bore and Stroke | Cubic Feet Displacement | R.P.M. | Max. Working Pressure | Motor Required (H.P.) | Size Flywheel Inches | No. "V" Belts Req. | Net Weight | Shipping Weight | Export Weight | Cubic Feet |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| U-1 | 1 | 2½x2 | 2.7 to 3.5 | 460-610 | 150 | ½- ¾ | 10⅛x2¾ | 1 | 50 | 70 | 90 | 3 |

**TWO STAGE**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RE-4 | 2 | 3¼-1¾x2⅛ | 4 to 5.1 | 390-500 | 200 | ¾-1 | 16⅜x2½ | 2 | 140 | 160 | 205 | 11 |
| REN-7 | 2 | 3¼-1¾x3 | 7.2 | 500 | 200 | 1½ | 16⅜x2½ | 2 | 165 | 185 | 230 | 11 |
| REN-10 | 2 | 3¾-2 x3 | 9.8 | 510 | 200 | 2 | 16⅜x2½ | 2 | 170 | 190 | 235 | 11 |
| REN-14 | 2 | 4⅝-2½x3 | 14.9 to 20 | 510-680 | 200 | 3-5 | 16⅜x2½ | 2 | 180 | 200 | 245 | 11 |
| RE-20 | 4 | 3¾-2 x3 | 21 | 530 | 200 | 5 | 19⅜x3 5/16 | 4 | 285 | 320 | 365 | 13 |
| RE-36 | 4 | 4⅝-2½x3 | 31 to 40 | 530-680 | 200 | 7½-10 | 19⅜x3 5/16 | 4 | 315 | 350 | 395 | 13 |

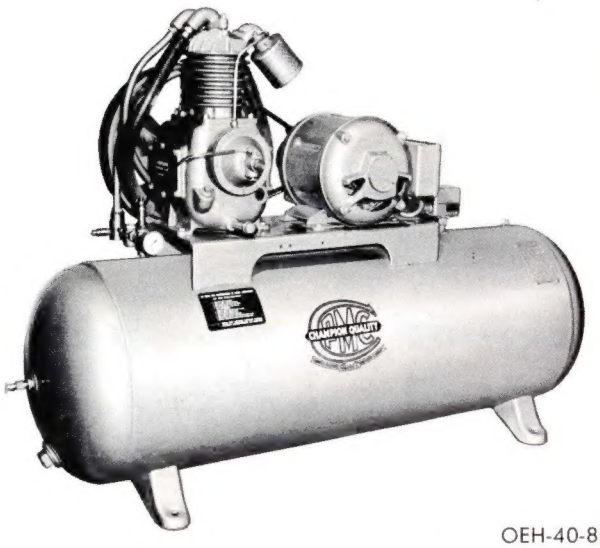
# TWO STAGE AUTOMATIC COMPRESSORS

## Horizontal Models

CHAMPION

### 1 H.P. to 5 H.P.
### 200 LBS. MAXIMUM PRESSURE

Champion Two Stage Horizontal Compressors are unsurpassed for economical, safe and long-life operation. Outstanding Champion quality features incorporated in these compressors give maximum efficiency with a minimum of power required for the air delivered.

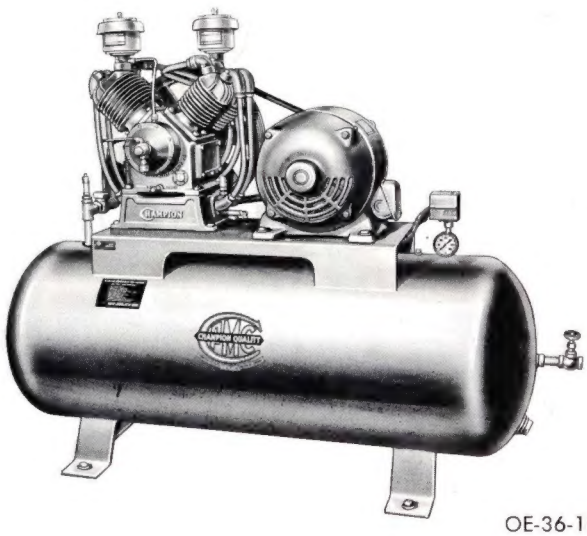


OEH-40-80

### FOUR CYLINDER "V" TYPE
### 5 H.P. TO 10 H.P.
### 200 LBS. MAXIMUM PRESSURE

Here are the large volume compressed air units needed for super service stations, large garages and car dealer service shops. Recommended for operation of multiple installations of air lifts, pneumatic greasing systems, inflation of bus and truck tires and for industrial use. Smooth running and quiet in operation. Vibration is reduced to a minimum for longer life.

Automatic controller set for tank pressure between 140 and 180 lbs. unless otherwise specified. Safety belt guard available. Automatic tank drains can be furnished factory installed.



OE-36-10

## SPECIFICATIONS

**TWO CYLINDER MODELS**

| Model | No. Cyl. | Bore and Stroke | R.P.M. | Cubic Feet Displacement | Motor H.P. | Size Tank Gallons | Max. Working Pressure | DIMENSIONS, INCHES | | | WEIGHT LBS. | | EXPORT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Length | Width | Height | Net | Shipping | Gross Weight | Cubic Feet |
| OE-34-60 | 2 | 3¼-1¾x2⅛ | 500 | 5.1 | 1 | 60 | 200 | 48 | 24½ | 52 | 460 | 505 | 615 | 43 |
| OEH-38-60 | 2 | 3¼-1¾x3 | 510 | 7.2 | 1½ | 60 | 200 | 48 | 24½ | 52 | 495 | 545 | 655 | 43 |
| OEH-38-80 | 2 | 3¼-1¾x3 | 510 | 7.2 | 1½ | 80 | 200 | 62 | 24 | 54 | 555 | 640 | 755 | 54 |
| OEH-40-60 | 2 | 3¾-2 x3 | 510 | 9.8 | 2 | 60 | 200 | 48 | 24½ | 52 | 525 | 575 | 685 | 43 |
| OEH-40-80 | 2 | 3¾-2 x3 | 510 | 9.8 | 2 | 80 | 200 | 62 | 24 | 54 | 570 | 660 | 770 | 54 |
| OEH-418 | 2 | 4⅝-2½x3 | 510 | 14.9 | 3 | 80 | 200 | 62 | 24 | 54 | 630 | 720 | 830 | 54 |
| OEH-458 | 2 | 4⅝-2½x3 | 680 | 20.0 | 5 | 80 | 200 | 62 | 27 | 54 | 660 | 750 | 860 | 54 |

**FOUR CYLINDER MODELS**

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OE-42-80 | 4 | 3¾-2 x3 | 530 | 21.0 | 5 | 80 | 200 | 62 | 27 | 54 | 770 | 860 | 970 | 54 |
| OE-36-80 | 4 | 4⅝-2½x3 | 530 | 31.0 | 7½ | 80 | 200 | 62 | 27 | 54 | 865 | 955 | 1065 | 54 |
| OE-36-120 | 4 | 4⅝-2½x3 | 530 | 31.0 | 7½ | 120 | 200 | 72 | 30 | 55 | 1030 | 1220 | 1490 | 95 |
| OE-36-10 | 4 | 4⅝-2½x3 | 680 | 40.0 | 10 | 120 | 200 | 72 | 30 | 55 | 1050 | 1240 | 1510 | 95 |

# CHAMPION

# TWO STAGE AUTOMATIC COMPRESSORS

## Vertical Models

TUV-55-80

### 1 H.P. TO 5 H.P.
### 200 LBS. MAXIMUM PRESSURE

Champion Two Stage Vertical models are designed to conserve floor space. They are adapted to meet fully all compressor requirements in the minimum space inherent in modern station design. They will prove ideal in garages and in industrial applications where service space means money.

All the outstanding Champion quality features are incorporated in these sturdy upright models. Holes are provided in the feet for anchoring. These models are balanced for safety, cannot fall over.

## SPECIFICATIONS

| Model | No. Cyl. | Bore and Stroke | R.P.M. | Cubic Feet Displacement | Motor H.P. | Size Tank Gallons | Max. Working Pressure | DIMENSIONS, INCHES | | | WEIGHT, LBS. | | EXPORT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Length | Width | Height | Net | Shipping | Gross Weight | Cubic Feet |
| TU-53-60 | 2 | 3¼-1¾x2⅛ | 500 | 5.1 | 1 | 60 | 200 | 39 | 27 | 81 | 470 | 560 | 670 | 49 |
| TUV-54-60 | 2 | 3¼-1¾x3 | 510 | 7.2 | 1½ | 60 | 200 | 39 | 27 | 81 | 480 | 570 | 680 | 49 |
| TUV-54-80 | 2 | 3¼-1¾x3 | 510 | 7.2 | 1½ | 80 | 200 | 39 | 31 | 81 | 540 | 630 | 740 | 56 |
| TUV-55-60 | 2 | 3¾-2 x3 | 510 | 9.8 | 2 | 60 | 200 | 39 | 27 | 81 | 510 | 600 | 710 | 49 |
| TUV-55-80 | 2 | 3¾-2 x3 | 510 | 9.8 | 2 | 80 | 200 | 39 | 31 | 81 | 570 | 670 | 780 | 56 |
| TUV-57-80 | 2 | 4⅝-2½x3 | 510 | 14.9 | 3 | 80 | 200 | 39 | 31 | 81 | 640 | 740 | 850 | 56 |
| TUV-458 | 2 | 4⅝-2½x3 | 680 | 20.0 | 5 | 80 | 200 | 39 | 31 | 81 | 700 | 760 | 870 | 56 |

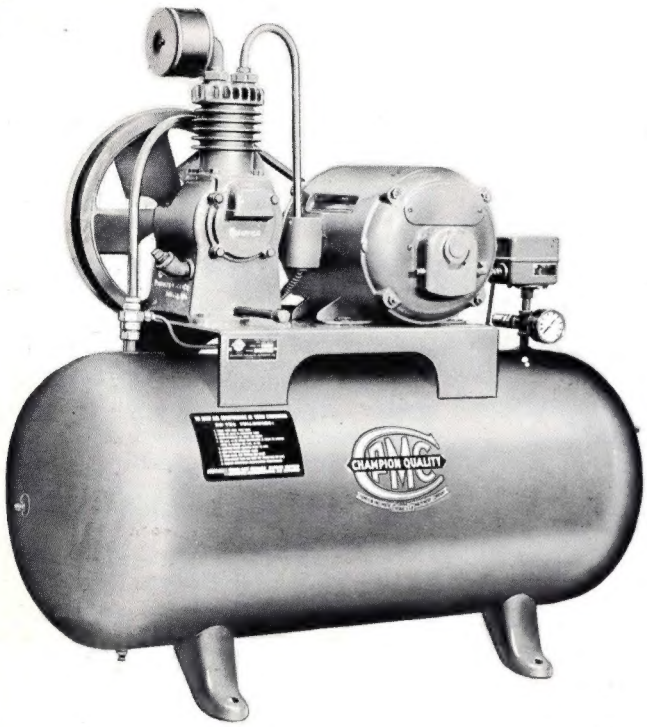
## OUTSTANDING FEATURES OF CHAMPION TWO STAGE AUTOMATIC COMPRESSORS:

1. Totally Enclosed Crankcase with patented crankshaft seal.
2. Totally Enclosed Centrifugal Unloader which automatically unloads compressor every time current is cut off. Motor never starts against load.
3. Honed Cylinders give higher efficiency, cut friction losses.
4. Domed Cylinders and Pistons prevent overheating and oil film breakdown.
5. Thin, Quiet Plate Valves are wear resisting, quick acting.
6. Roller-Type Main Bearings, babbitt-lined connecting rod bearings.
7. Drop-Forged Crankshaft and connecting rods.
8. Copper Finned Intercooler mounted directly in stream of large diameter fan blade flywheel for positive cooling action.
9. Patented After Cooler.
10. Multiple "V" Belt Drive running in grooved pulleys are smooth and quiet in operation.
11. Automatic Pressure Switch cuts in and out to maintain pressure level.

**NOTE:** A safety belt guard is available for 1 H.P. models and up. Automatic tank drains can be furnished factory-installed.

# SINGLE STAGE AUTOMATIC COMPRESSORS

CHAMPION



X-18

U-17

**SINGLE CYLINDER MODELS**
**1/2 H.P. TO 3/4 H.P.**
**150 LBS. MAXIMUM PRESSURE**

Here are efficient Champion Air Compressors for intermittent automotive and similar service in the 150 lb. pressure range. Incorporating all of the outstanding Champion Quality features, these models are ideal for the services listed.

Models U-17 and U-18 are vertical types comparable with horizontal Models X-17 and X-18.

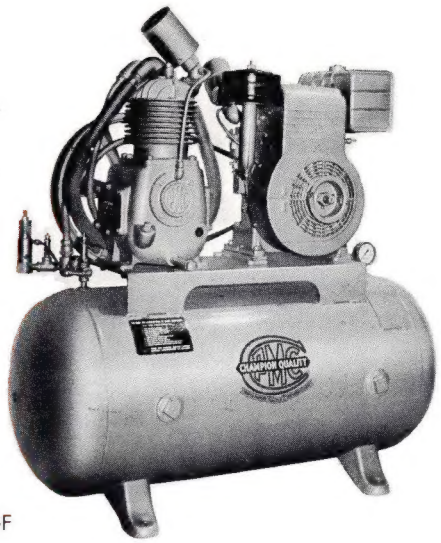
All models are equipped with pressure switch release valves to unload compressor each time it stops automatically. Pressure switch set to cut in at 120 and out at 150 lbs. P.S.I.

## SPECIFICATIONS

| Model | No. Cyl. | Bore and Stroke | R.P.M. | Cubic Feet Displacement | Motor H.P. | Size Tank Gallons | Max. Working Pressure | DIMENSIONS, INCHES | | | WEIGHT LBS. | | EXPORT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Length | Width | Height | Net | Shipping | Gross Weight | Cubic Feet |
| X-17 | 1 | 2½x2 | 460 | 2.7 | ½ | 30 | 150 | 41 | 20 | 42 | 200 | 235 | 280 | 20 |
| X-18 | 1 | 2½x2 | 610 | 3.5 | ¾ | 30 | 150 | 41 | 20 | 42 | 210 | 245 | 280 | 20 |
| U-17 | 1 | 2½x2 | 460 | 2.7 | ½ | 30 | 150 | 24 | 18 | 60 | 200 | 260 | 315 | 15 |
| U-18 | 1 | 2½x2 | 610 | 3.5 | ¾ | 30 | 150 | 24 | 18 | 60 | 210 | 270 | 325 | 15 |

# CHAMPION

# AIR COMPRESSORS GASOLINE ENGINE DRIVE



OEH-40-60GF

## SINGLE AND TWO STAGE MODELS 1 1/2 H.P. TO 8.4 H.P.

These rugged compressors are designed for use where electric power is not available. Dependable in operation, they have found wide acceptance among outlying service stations, garages, tourist camps and on tire service trucks. The two stage models are ideal for use with portable lubrication equipment for servicing tractors and road building units. Sturdy, dependable air-cooled engines start quickly without load. Model X-18G has a bleeder unloader, and all other models have constant speed unloaders as optional equipment.

### SPECIFICATIONS

**TWO STAGE**

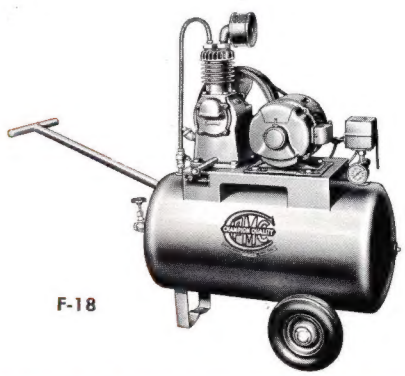
| Model | No. Cyl. | Bore and Stroke | R.P.M. | Cubic Feet Displacement | Motor H.P. | Size Tank Gallons | Max. Working Pressure | DIMENSIONS, INCHES | | | WEIGHT, LBS. | | EXPORT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Length | Width | Height | Net | Shipping | Gross Weight | Cubic Feet |
| OE-34-60G | 2 | 3¼-1¾x3 | 500 | 5.1 | 2 | 60 | 175 | 48 | 24½ | 52 | 410 | 460 | 610 | 43 |
| OEH-40-60GF | 2 | 3¾-2 x3 | 510 | 9.8 | 4 | 60 | 175 | 48 | 24½ | 52 | 500 | 550 | 660 | 43 |
| OEH-418GF | 2 | 4⅝-2½x3 | 510 | 14.9 | 5 | 80 | 175 | 62 | 24 | 54 | 620 | 670 | 780 | 54 |
| OE-42-80GF | 4 | 3¾-2 x3 | 600 | 23.0 | 8.4 | 80 | 175 | 62 | 27 | 54 | 770 | 820 | 930 | 54 |

**SINGLE STAGE**

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X-18G | 1 | 2½x2 | 770 | 4.4 | 1.5 | 30 | 150 | 41 | 20 | 42 | 185 | 220 | 255 | 20 |

Safety Belt Guards and Automatic Tank Drains are available for all models except X-18-G.

# PORTABLE COMPRESSORS



F-18

## GASOLINE OR ELECTRIC MOTOR DRIVE 1/2 H.P. to 1 1/2 H.P., 125 LBS. MAXIMUM PRESSURE

These new Champion Portable Compressors are ruggedly built, providing 125 lbs. working pressure and large 20 gallon tanks just right for tire inflation, lubrication, spraying, cleaning, etc. Ideal for farm use, for use with road building and other construction machinery—anywhere the need for an efficient, portable compressor exists. Includes rubber tired wheels. Has long handle for easy maneuverability.

### SPECIFICATIONS

| Model | Cubic Feet Displacement | Motor H.P. | Tank Gals. | Bore and Stroke | Working Pressure, Lbs. | DIMENSIONS, INCHES | | | WEIGHT | | EXPORT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Length | Width | Height | Net | Shipping | Weight | Cu. Feet |
| F-17 | 3.0 | ½ | 20 | 2½x2 | 125 | 36 | 18 | 33 | 155 | 180 | 245 | 17 |
| F-18 | 3.7 | ¾ | 20 | 2½x2 | 125 | 36 | 18 | 33 | 170 | 195 | 260 | 17 |
| F-18G | 4.4 | 1½ | 20 | 2½x2 | 125 | 36 | 18 | 33 | 155 | 180 | 245 | 17 |

# TIRE SERVICE COMPRESSOR

CHAMPION

The Champion Tire Service Compressor has a "heart of steel" . . . *precision-designed* with proven automotive-type features for dependability and economy . . . *action-built* of the finest materials for stamina!

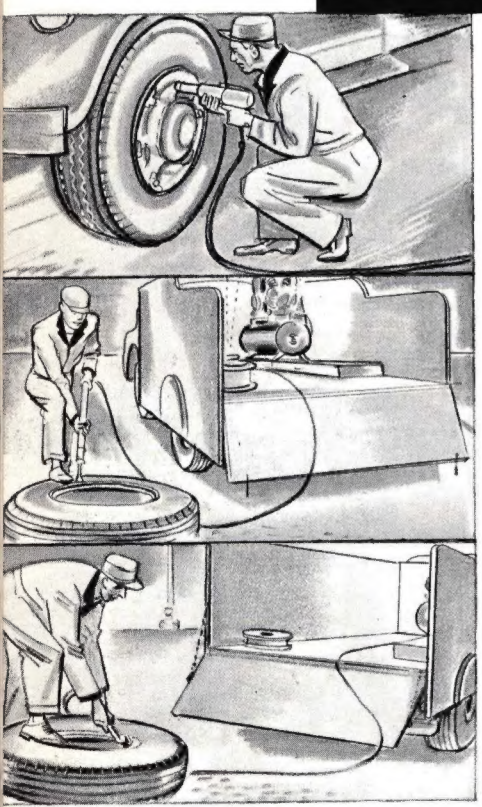
WISCONSIN ENGINE—Each **OEH-453-GF** Compressor is equipped with a dependable 4-cycle gasoline engine that develops 7.7 H.P. An electric starter gives quick starts . . . speeds service.

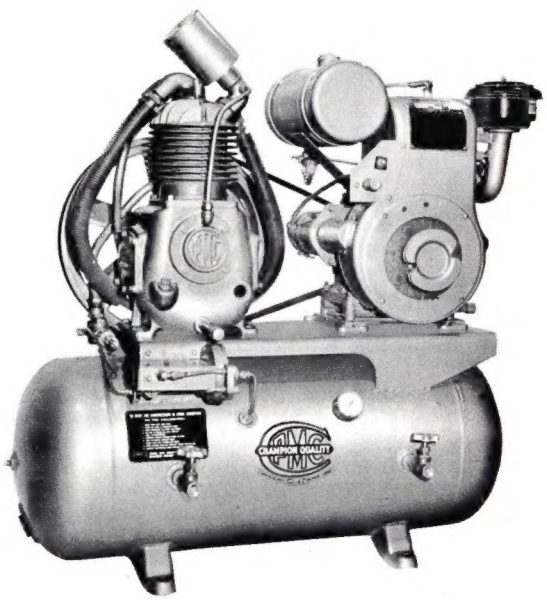
CONSTANT SPEED UNLOADER—The Champion constant speed unloader opens and closes the air intake—automatically—to meet the demand for air while the compressor runs at a constant 680 rpm.

STORAGE TANK—Champion Model OEH-453GF has all equipment mounted on an air receiver with a total volume of 30 gallons. Conveniently located drain valve simplifies periodic residue removal.

*Optional equipment: A safety belt guard is available for personnel protection where desired.*

## DEPENDABLE . . . TROUBLE-FREE OPERATION





OEH-453-GF

## SPECIFICATIONS

| Model | No. Cyl. | Bore and Stroke | R.P.M. | Delivered Air C.F.M. | Motor H.P. | Size Tank Gallons | Max. Working Pressure | Dimensions, Inches | | | Weight, Lbs. | | Export | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Length | Width | Height | Net | Shipping | Gross Weight | Cubic Feet |
| OEH-453-GF | 2 | 4⅝-2½x3 | 680 | 20 | 7.7 | 30 | 200 | 41 | 20 | 49 | 500 | 550 | 585 | 23 |

CHAMPION

# AUTOMATIC TANK DRAIN VALVE

The same rugged dependability that makes Champion the performance leader in the compressor field is incorporated in the Automatic Tank Drain Valve. Its dependable automatic operation allows you to install it—and forget it! With Champion, you get a LARGER, LONGER-LASTING DIAPHRAGM which assures positive valve opening action at low exhaust pressures. TIMER CONTROL and large valve discharge chamber gives faster, complete cleaning with MINIMUM AIR LOSS. WIDER-RANGE ADJUSTABLE TIMER assures full drainage under heaviest air-moisture conditions. DIRECT EJECTION means there are no screens or filters to clean—no chance for residue to collect and hamper operation. RUSTPROOF special aluminum alloy construction for long trouble-free service.

The Champion Automatic Tank Drain Valve is available factory-installed, or for installation on your present compressor.

# OVERHEAD WATER — AIR HOSE REELS

**SAVE TIME**
- Always within easy reach
- Stays at desired length
- Slight pull rewinds

**ACCESSIBLE**
- Housing easily removed
- Inspection-adjustment plate

**PRECISION BUILT**
- Special spring steel motor spring
- Governor controls speed
- Brake holds hose secure

**CUT COST**
- Longer hose life
- Fully enclosed reel housing
- Brake controlled hose rewind

**SAFE**
- Keeps Hose off-the-floor

**CHAMPION REELS**
30 ft. 5/16" air hose furnished.

ER-2 ES-3

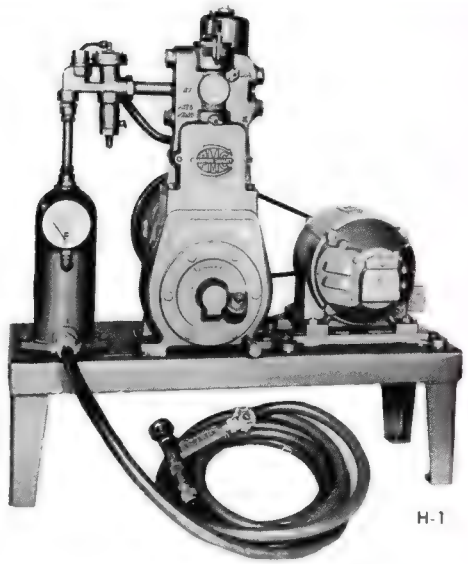
| | SPECIFICATIONS | |
|---|---|---|
| Type | Shipping Weight | Dimensions |
| ER-2 Air Hose | 75 lbs. | 7½" x 25" |
| ER-2W Water Hose | 75 lbs. | 7½" x 25" |
| ES-3 Air Hose | 75 lbs. | 10" x 26½" |
| ES-3W Water Hose | 75 lbs. | 10" x 26½" |

# HIGH PRESSURE WASHERS

CHAMPION

## "TYPE H" HIGH PRESSURE WASHERS

Here are three models of the popular Champion Washer. These heavy duty machines will give years of trouble-free service with a minimum of maintenance. All parts are made and assembled by Champion. This means low initial cost plus easily obtainable replacement parts when needed. Precision construction results in extremely quiet operation. H-1, H-2 and H-2-3 models deliver 5, 7 and 14 gallons of water per minute at 300 lbs. pressure to wash a car quickly and easily.



H-1

## FEATURES

**Silent Drive**—double reduction drive of helical gears and "V" belt.

**Pressure Control and Unloader**—when gun is shut off, water by-passes, washer runs against no load.

**Double Acting Cylinder.**

**Filtering Trap**—keeps out dirt.

**Crankcase**—totally enclosed. Keeps water out.

**Piston Rod**—ground stainless steel.

**Brass Valves and Seats**—all interchangeable.

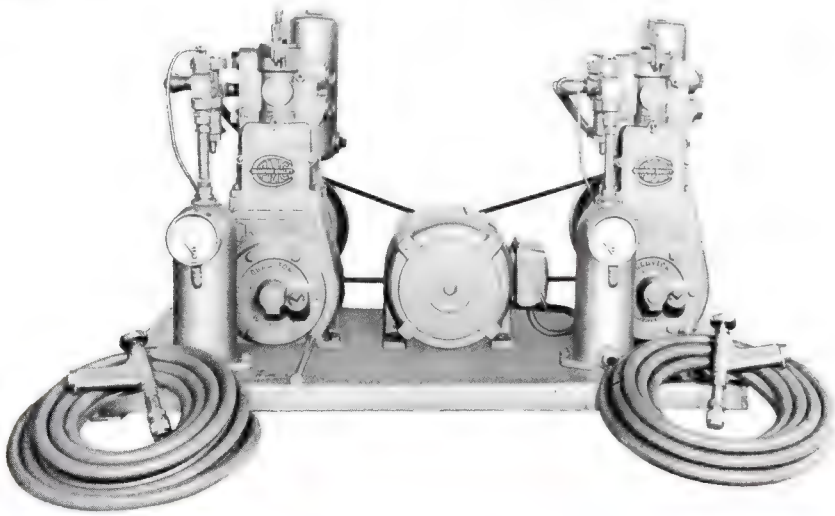
**Hose**—½" I.D. high pressure hose.

**Base Plate**—heavy steel construction.

**Self-Lubricating.**

**Accessories**—available at extra cost. 8-foot suction hose with strainer. Safety belt guard. Model H-2-3 is equipped with 2 guns but is available on order with one 14g.p.m. 300 lb. gun for production work.

**The CHAMPION GUN**—furnished with the "Type H" Washer, is designed and manufactured exclusively for high pressure washing. Provides a powerful cutting stream or can be adjusted for fine spray without reducing water supply through the nozzle. Special non-corrosive hardened steel nozzle disc assures long service life. Pistol grip handle eliminates operator fatigue.



H-2-3

## SPECIFICATIONS

| Model | No. Guns | Motor H.P. | Gallons Water Minute | Bore and Stroke | Water Press. Lbs. | Intake Pipe Size | DIMENSIONS, INCHES | | | WEIGHT, LBS. | | EXPORT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Length | Width | Height | Net | Shipping | Gross Weight | Cubic Feet |
| H-1 | 1 | 1 | 5 | 1¾"x1½" | 300 | ¾" | 37 | 15 | 40 | 290 | 315 | 360 | 21 |
| H-2 | 1 | 1½ | 7 | 2" x1½" | 300 | ¾" | 37 | 15 | 40 | 310 | 335 | 380 | 21 |
| H-2-3 | 2 | 3 | 14 | 2" x1½" (2 Pumps) | 300 | 1" | 56 | 32 | 38 | 570 | 620 | 710 | 32 |

## VOLUME OF COMPRESSED AIR IN CUBIC FT. REQUIRED PER STROKE TO OPERATE AIR CYLINDER

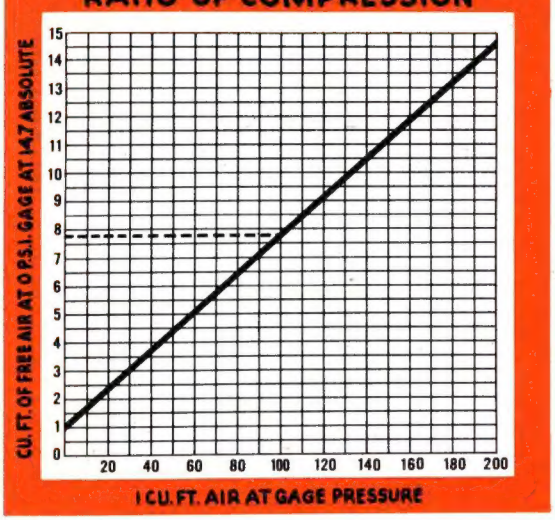
These volumes are for single acting cylinders. For double acting cylinders, multiply by two and substract the volume of the piston rod.

| Piston Dia. in Inches | LENGTH OF STROKE IN INCHES | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1¾ | .00139 | .00278 | .00416 | .00555 | .00694 | .00832 | .00972 | .0111 | .0125 | .0139 | .0153 | .01665 |
| 1⅞ | .00158 | .00316 | .00474 | .00632 | .0079 | .00948 | .01105 | .01262 | .0142 | .0158 | .0174 | .01895 |
| 2 | .00182 | .00364 | .00545 | .00727 | .0091 | .0109 | .0127 | .0145 | .01636 | .0182 | .020 | .0218 |
| 2⅛ | .00205 | .0041 | .00615 | .0082 | .01025 | .0123 | .0144 | .0164 | .0185 | .0205 | .0226 | .0246 |
| 2¼ | .0023 | .0046 | .0069 | .0092 | .0115 | .0138 | .0161 | .0184 | .0207 | .0230 | .0253 | .0276 |
| 2⅜ | .00256 | .00512 | .00768 | .01025 | .0128 | .01535 | .01792 | .02044 | .0230 | .0256 | .0282 | .0308 |
| 2½ | .00284 | .00568 | .00852 | .01137 | .0142 | .0171 | .0199 | .0228 | .0256 | .0284 | .0312 | .0343 |
| 2⅝ | .00313 | .00626 | .0094 | .01254 | .01568 | .0188 | .0219 | .0251 | .0282 | .0313 | .0345 | .0376 |
| 2¾ | .00343 | .00686 | .0106 | .0137 | .0171 | .0206 | .0240 | .0272 | .0308 | .0343 | .0378 | .0412 |
| 2⅞ | .00376 | .00752 | .0113 | .01503 | .01877 | .0226 | .0263 | .0301 | .0338 | .0376 | .0413 | .045 |
| 3 | .00409 | .00818 | .0123 | .0164 | .0204 | .0246 | .0286 | .0327 | .0368 | .0409 | .0450 | .049 |
| 3⅛ | .00443 | .00886 | .0133 | .0177 | .0222 | .0266 | .0310 | .0354 | .0399 | .0443 | .0488 | .0532 |
| 3¼ | .0048 | .0096 | .0144 | .0192 | .024 | .0288 | .0336 | .0384 | .0432 | .0480 | .0529 | .0575 |
| 3⅜ | .00518 | .01036 | .0155 | .0207 | .0259 | .031 | .0362 | .0415 | .0465 | .0518 | .057 | .062 |
| 3½ | .00555 | .0112 | .0167 | .0222 | .0278 | .0333 | .0389 | .0445 | .050 | .0556 | .061 | .0666 |
| 3⅝ | .00595 | .0119 | .0179 | .0238 | .0298 | .0357 | .0416 | .0477 | .0536 | .0595 | .0655 | .0715 |
| 3¾ | .0064 | .0128 | .0192 | .0256 | .032 | .0384 | .0447 | .0512 | .0575 | .064 | .0702 | .0766 |
| 3⅞ | .0068 | .01362 | .0205 | .0273 | .0341 | .041 | .0477 | .0545 | .0614 | .068 | .075 | .082 |
| 4 | .00725 | .0145 | .0218 | .029 | .0363 | .0435 | .0508 | .058 | .0653 | .0725 | .0798 | .087 |
| 4⅛ | .00773 | .01547 | .0232 | .0309 | .0386 | .0464 | .0541 | .0618 | .0695 | .0773 | .0851 | .093 |
| 4¼ | .0082 | .0164 | .0246 | .0328 | .041 | .0492 | .0574 | .0655 | .0738 | .082 | .0903 | .0985 |
| 4⅜ | .0087 | .0174 | .0261 | .0348 | .0435 | .0522 | .0608 | .0695 | .0782 | .087 | .0958 | .1042 |
| 4½ | .0092 | .0184 | .0276 | .0368 | .046 | .0552 | .0643 | .0735 | .0828 | .092 | .101 | .1105 |
| 4⅝ | .0097 | .0194 | .0291 | .0388 | .0485 | .0582 | .0679 | .0775 | .0873 | .097 | .1068 | .1163 |
| 4¾ | .01025 | .0205 | .0308 | .041 | .0512 | .0615 | .0717 | .0818 | .0922 | .1025 | .1125 | .123 |
| 4⅞ | .0108 | .0216 | .0324 | .0431 | .054 | .0647 | .0755 | .0862 | .097 | .108 | .1185 | .1295 |
| 5 | .0114 | .0228 | .0341 | .0455 | .0568 | .0681 | .0795 | .091 | .1023 | .114 | .125 | .136 |
| 5⅛ | .01193 | .0239 | .0358 | .0479 | .0598 | .0716 | .0837 | .0955 | .1073 | .1193 | .1315 | .1435 |
| 5¼ | .0125 | .0251 | .0376 | .0502 | .0627 | .0753 | .0878 | .100 | .1128 | .125 | .138 | .151 |
| 5⅜ | .0131 | .0263 | .0394 | .0525 | .0656 | .0788 | .092 | .105 | .118 | .131 | .144 | .158 |
| 5½ | .01375 | .0275 | .0412 | .055 | .0687 | .0825 | .0962 | .110 | .1235 | .1375 | .151 | .165 |
| 5⅝ | .0144 | .0288 | .0432 | .0575 | .072 | .0865 | .101 | .115 | .1295 | .144 | .1585 | .173 |
| 5¾ | .015 | .030 | .045 | .060 | .075 | .090 | .105 | .120 | .135 | .150 | .165 | .180 |
| 5⅞ | .0157 | .0314 | .047 | .0628 | .0785 | .094 | .110 | .1254 | .142 | .157 | .1725 | .188 |
| 6 | .0164 | .0328 | .0492 | .0655 | .082 | .0983 | .1145 | .131 | .147 | .164 | .180 | .197 |
| 6⅛ | .0171 | .0342 | .0513 | .0685 | .0855 | .1027 | .120 | .137 | .154 | .171 | .188 | .205 |
| 6¼ | .0178 | .0356 | .0533 | .071 | .089 | .107 | .125 | .142 | .160 | .178 | .196 | .214 |
| 6⅜ | .01845 | .0369 | .0555 | .074 | .0925 | .111 | .129 | .148 | .166 | .1845 | .203 | .222 |
| 6½ | .0192 | .0384 | .0575 | .0768 | .096 | .115 | .134 | .153 | .173 | .192 | .211 | .230 |
| 6⅝ | .020 | .040 | .060 | .080 | .100 | .120 | .140 | .160 | .180 | .200 | .220 | .240 |
| 6¾ | .0207 | .0414 | .062 | .0828 | .1035 | .124 | .145 | .166 | .1865 | .207 | .228 | .248 |
| 6⅞ | .0215 | .043 | .0645 | .086 | .1075 | .129 | .150 | .172 | .193 | .215 | .236 | .258 |
| 7 | .0223 | .0446 | .067 | .0892 | .1115 | .1336 | .156 | .178 | .200 | .223 | .245 | .268 |
| 7⅛ | .0231 | .0462 | .0692 | .0924 | .1154 | .1385 | .162 | .185 | .208 | .231 | .254 | .277 |
| 7¼ | .0239 | .0477 | .0716 | .0955 | .119 | .143 | .167 | .191 | .215 | .239 | .263 | .286 |
| 7⅜ | .0247 | .0495 | .0742 | .099 | .124 | .1485 | .173 | .198 | .223 | .247 | .272 | .297 |
| 7½ | .0256 | .0512 | .0768 | .105 | .128 | .1538 | .1792 | .205 | .232 | .256 | .282 | .307 |

# SELECTING AIR COMPRESSOR

CHAMPION

## RATIO OF COMPRESSION




## COMPRESSOR TANK STORAGE CAPACITY

| Diameter x Length | | 14" x 36" | 14" x 48" | 20" x 48" | 20" x 60" | 24" x 72" |
|---|---|---|---|---|---|---|
| Normal | Gallons | 22 | 32 | 60 | 80 | 140 |
| Capacity | Cu. Ft. | 2.9 | 4.0 | 8.0 | .0.2 | .8.8 |
| Capacity | 100 lbs. | 22.6 | 31.2 | 62.4 | 79.6 | 146.8 |
| Cubic Feet | 125 lbs. | 27.5 | 38.0 | 76.0 | 96.9 | 178.7 |
| Free Air | 150 lbs. | 32.5 | 44.8 | 89.6 | 114.2 | 210.2 |
| At pressures | 175 lbs. | 37.4 | 51.6 | 103.2 | 131.5 | 148.9 |
| Given | 200 lbs. | 42.3 | 58.4 | 116.8 | 148.9 | 274.3 |

| Gage Pres. in Receiver (Lbs.) | FLOW OF FREE AIR (CU. FT. PER MIN.) THROUGH ORIFICES OF VARIOUS DIAMETERS | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1/64" | 1/32" | 3/64" | 1/16" | 3/32" | 1/8" | 3/16" | 1/4" |
| 1 | .027 | .107 | .242 | .430 | .97 | 1.72 | 3.86 | 6.85 |
| 2 | .038 | .153 | .342 | .607 | 1.36 | 2.43 | 5.42 | 9.74 |
| 3 | .046 | .188 | .471 | .750 | 1.68 | 2.98 | 6.71 | 11.9 |
| 5 | .059 | .242 | .545 | .965 | 2.18 | 3.86 | 8.71 | 15.4 |
| 10 | .084 | .342 | .77 | 1.36 | 3.08 | 5.45 | 12.3 | 21.8 |
| 15 | .103 | .418 | .94 | 1.67 | 3.75 | 6.65 | 15.0 | 26.7 |
| 20 | .119 | .485 | 1.07 | 1.93 | 4.25 | 7.7 | 17.1 | 30.8 |
| 25 | .133 | .54 | 1.21 | 2.16 | 4.75 | 8.6 | 19.4 | 34.5 |
| 30 | .156 | .632 | 1.40 | 2.52 | 5.6 | 10.0 | 22.5 | 40.0 |
| 35 | .173 | .71 | 1.56 | 2.80 | 6.2 | 11.2 | 25.0 | 44.7 |
| 40 | .19 | .77 | 1.71 | 3.07 | 6.8 | 12.3 | 27.5 | 49.1 |
| 45 | .208 | .843 | 1.9 | 3.36 | 7.6 | 13.4 | 30.3 | 53.8 |
| 50 | .225 | .914 | 2.05 | 3.64 | 8.2 | 14.5 | 32.8 | 58.2 |
| 60 | .26 | 1.05 | 2.35 | 4.2 | 9.4 | 16.8 | 37.5 | 67 |
| 70 | .295 | 1.19 | 2.68 | 4.76 | 10.7 | 19.0 | 43.0 | 76 |
| 80 | .33 | 1.33 | 2.97 | 5.32 | 11.9 | 21.2 | 47.5 | 85 |
| 90 | .364 | 1.47 | 3.28 | 5.87 | 13.1 | 23.5 | 52.5 | 94 |
| 100 | .40 | 1.61 | 3.66 | 6.45 | 14.5 | 25.8 | 58.3 | 103 |
| 110 | .43 | 1.76 | 3.95 | 7.00 | 15.7 | 28.0 | 63 | 112 |
| 120 | .47 | 1.90 | 4.27 | 7.58 | 17.0 | 30.2 | 68 | 121 |
| 130 | .50 | 2.04 | 4.57 | 8.13 | 18.2 | 32.4 | 73 | 130 |
| 140 | .54 | 2.17 | 4.87 | 8.68 | 19.5 | 34.5 | 78 | 138 |
| 150 | .57 | 2.33 | 5.20 | 9.20 | 20.7 | 36.7 | 83 | 147 |
| 175 | .66 | 2.65 | 5.94 | 10.6 | 23.8 | 42.1 | 95 | 169 |
| 200 | .76 | 3.07 | 6.90 | 12.2 | 27.5 | 48.7 | 110 | 195 |

The capacity of an air compressor cannot be checked accurately by use of this table and a narrow edge orifice. Specialized equipment is necessary to check compressor capacity.

Example: An air ejector is being used on a punch press. It is connected to an air line with pressure at 120-150 p.s.i. It has a nozzle orifice 3/32 in. in diameter, and, through use of a stop watch, it delivers compressed air for a total of 30 seconds out of each one minute of operation.

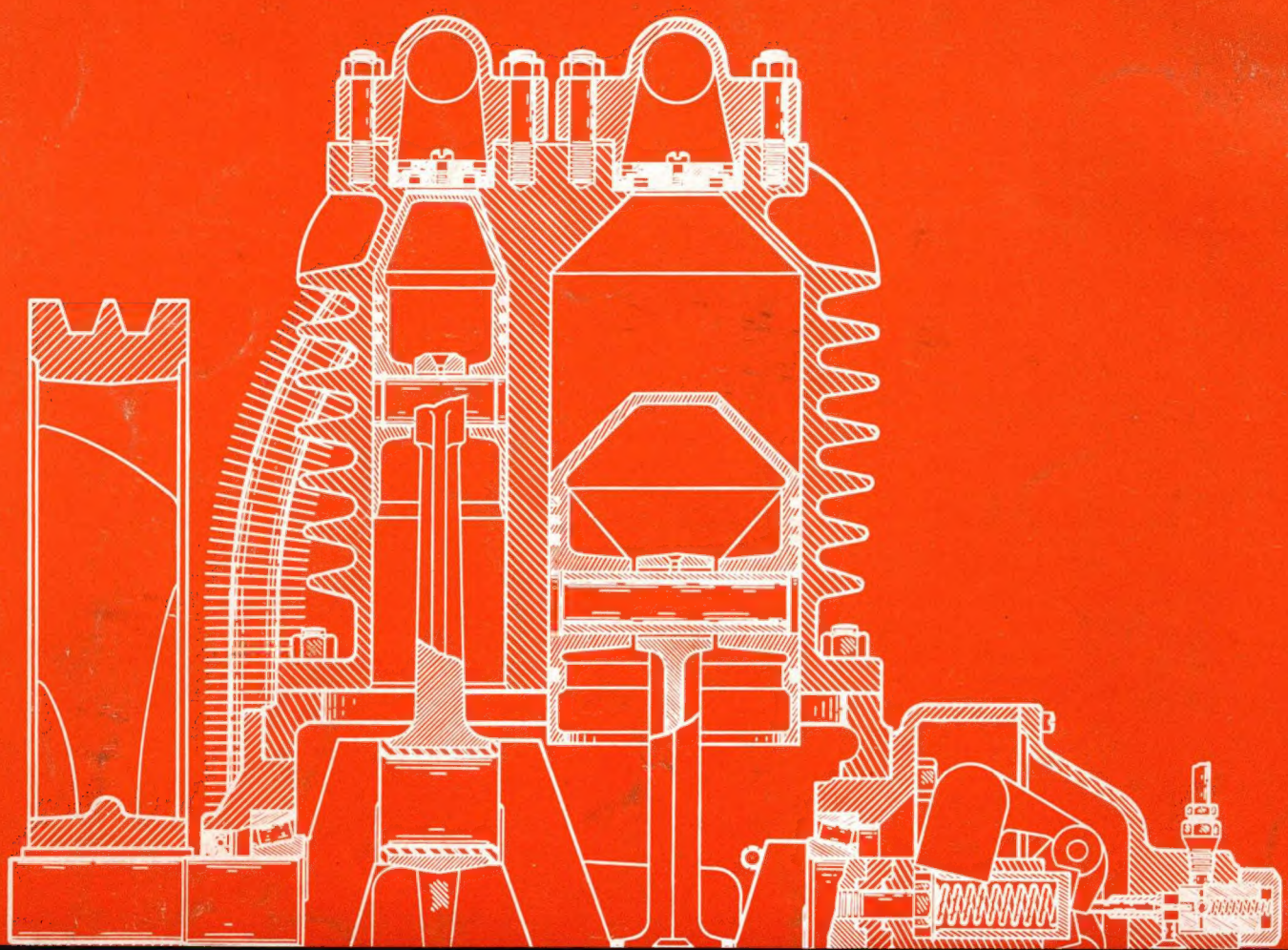
Reference to the chart indicates at 150 p.s.i., a 3/32 in. diameter orifice will allow 20.7 c.f.m. to flow through the nozzle in one minute. However, air flow takes place only for 30 seconds out of each 60 seconds or 30/60 of the time, therefore, only ½ of 20.7 or 10.35 c.f.m. will flow for each elapsed minute.

From Chart No. 2, under the column "Continuous Operation" and opposite the pressure range 120-150 p.s.i., select the air compressor, which will be a 3 HP, 2-stage unit.

## HANDY COMPRESSOR SPECIFICATIONS CHART

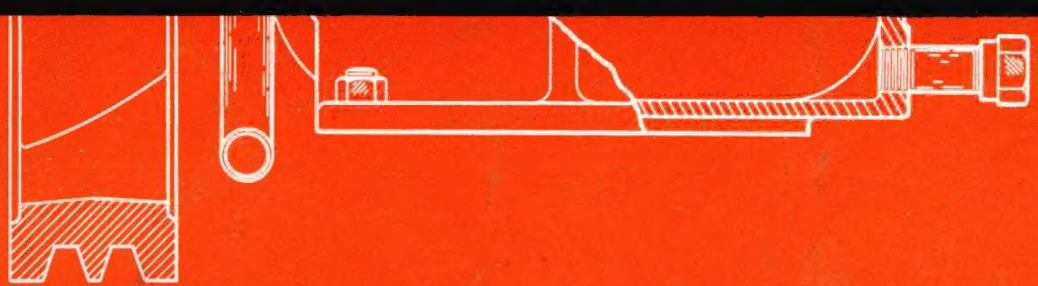
| | | Equipment No. | Pump No. | No. Cyl. | Bore and Stroke | R.P.M. | C.F.M. | Motor H.P. | Tank |
|---|---|---|---|---|---|---|---|---|---|
| SINGLE STAGE AUTOMATIC COMPRESSORS | ELECTRIC OPERATED | F-17 | U-1 | 1 | 2½x2 | 550 | 3.0 | ½ | 20 |
| | | F-18 | U-1 | 1 | 2½x2 | 650 | 3.7 | ¾ | 20 |
| | | X-17 | U-1 | 1 | 2½x2 | 460 | 2.7 | ½ | 30 |
| | | X-18 | U-1 | 1 | 2½x2 | 610 | 3.5 | ¾ | 30 |
| | | U-17 | U-1 | 1 | 2½x2 | 460 | 2.7 | ½ | 30 |
| | | U-18 | U-1 | 1 | 2½x2 | 610 | 3.5 | ¾ | 30 |
| | GAS | F-18G | U-1 | 1 | 2½x2 | 770 | 4.4 | 1½ | 20 |
| | | X-18G | U-1 | 1 | 2½x2 | 770 | 4.4 | 1½ | 20 |
| TWO STAGE AUTOMATIC COMPRESSORS | ELECTRIC OPERATED | OE-34-60 | RE-4 | 2 | 3¼-1¾x2⅛ | 500 | 5.1 | 1 | 60 |
| | | OEH-38-60 | REN-7 | 2 | 3¼-1¾x3 | 510 | 7.2 | 1½ | 60 |
| | | OEH-38-80 | REN-7 | 2 | 3¼-1¾x3 | 510 | 7.2 | 1½ | 80 |
| | | OEH-40-60 | REN-10 | 2 | 3¾-2x3 | 510 | 9.8 | 2 | 60 |
| | | OEH-40-80 | REN-10 | 2 | 3¾-2x3 | 510 | 9.8 | 2 | 80 |
| | | OEH-418 | REN-14 | 2 | 4⅝-2½x3 | 510 | 14.9 | 3 | 80 |
| | | OEH-458 | REN-14 | 2 | 4⅝-2½x3 | 680 | 20.0 | 5 | 80 |
| | | OE-42-80 | RE-20 | 4 | 3¾-2x3 | 530 | 21.0 | 5 | 80 |
| | | OE-36-80 | RE-36 | 4 | 4⅝-2½x3 | 530 | 31.0 | 7½ | 80 |
| | | OE-36-120 | RE-36 | 4 | 4⅝-2½x3 | 530 | 31.0 | 7½ | 120 |
| | | OE-36-10 | RE-36 | 4 | 4⅝-2½x3 | 680 | 40.0 | 10 | 120 |
| | | TU-53-60 | RE-4 | 2 | 3¼-1¾x2⅛ | 500 | 5.1 | 1 | 60 |
| | | TUV-54-60 | REN-7 | 2 | 3¼-1¾x3 | 510 | 7.2 | 1½ | 60 |
| | | TUV-54-80 | REN-7 | 2 | 3¼-1¾x3 | 510 | 7.2 | 1½ | 80 |
| | | TUV-55-60 | REN-10 | 2 | 3¾-2x3 | 510 | 9.8 | 2 | 60 |
| | | TUV-55-80 | REN-10 | 2 | 3¾-2x3 | 510 | 9.8 | 2 | 80 |
| | | TUV-57-80 | REN-14 | 2 | 4⅝-2½x3 | 510 | 14.9 | 3 | 80 |
| | | TUV-458 | REN-14 | 2 | 4⅝-2½x3 | 680 | 20.0 | 5 | 80 |
| | GASOLINE | OE-34-60GF | RE-4F | 2 | 3¼-1¾x2⅛ | 500 | 5.1 | 2 | 60 |
| | | OEH-40-60GF | REN-10F | 2 | 3¾-2x3 | 510 | 9.8 | 4 | 60 |
| | | OEH-418GF | REN-14F | 2 | 4⅝-2½x3 | 510 | 14.9 | 5 | 80 |
| | | OEH-458GF | REN-14F | 2 | 4⅝-2½x3 | 680 | 20.0 | 7.7 | 80 |
| | | OEH-453GF | REN-14F | 2 | 4⅝-2½x3 | 680 | 20.0 | 7.7 | 30 |
| | | OE-42-80GF | RE-20F | 4 | 3¾-2x3 | 600 | 23.0 | 8.4 | 80 |

Suffix "F" denotes less Centrifugal Unloader.



# CHAMPION

**AIR COMPRESSORS • CAR WASHERS • HOSE REELS**
**FOR AUTOMOTIVE • INDUSTRIAL • AGRICULTURAL USE**



Form 1051 2-56

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